

POWER OF ATTORNEY

The University of Utah Research Foundation hereby appoints as its attorneys and/or patent agents, Grant R. Clayton, Registration No. 32,462; Alan J. Howarth, Registration No. 36,553; Karl R. 36,468; Clifford Registration No. В. Vaterlaus, Registration No. 47,261; and Terrence J. Edwards, Registration No. P-50,254; all with full power of substitution and revocation, to prosecute this application FINDING ACTIVE ANTISENSE OLIGONUCLEOTIDES USING ARTIFICIAL NEURAL NETWORKS, filed on January 14, 2002, and granted Serial No. _____10/050,888 ____; and to transact all business in the Patent and Trademark Office connected therewith. (I hereby authorize the attorneys of Clayton, Howarth & Cannon, P.C., to insert said serial number when known.)

Please direct all future correspondence in connection with this application to:

Customer No. 20450

Please direct all telephonic and facsimile communications to:

Alan J. Howarth, Ph.D. Telephone: (801)255-5335 Facsimile: (801)255-5338

Please reference the below provided attorney docket number in all communications:

T9479.B

The University of Utah Research Foundation is the assignee of record of the entire interest and a statement under 37 C.F.R. § 3.73(b) is enclosed.

Signed at Soff (also City), Vah (State/Country), this (State/Country) day of March , 2002.

The University of Utah Research Foundation

Raymond F. Gesteland

President

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DECLARATION AND PETITION

We, Raymond F. GESTELAND, John F. ATKINS, Olga V. MATVEEVA, and Michael C. GIDDINGS, declare: that we are citizens of the United States of America, Ireland, the Russian Federation, and the United States of America, respectively; that our residences and post office addresses are 6877 East Killyons Canyon Lane, Salt Lake City, Utah 84018; 3134 East Emigration Canyon Road, Salt Lake City, Utah 84018; 250 North 200 West, No. 203, Salt Lake City, Utah 212 Wild Turkey Trail, Chapel Hill, NC 27516 84103; and 4800 East Emigration Canyon Road, Salt Lake City, Utah 84108, respectively; that we verily believe we are the original, first, and joint inventors of the subject matter of the invention or discovery entitled FINDING ACTIVE ANTISENSE OLIGONUCLEOTIDES USING ARTIFICIAL NEURAL NETWORKS, for which a patent is sought and which is described and claimed in the specification filed January 14, 2002; and granted Serial No. 10/050,888 (we hereby authorize the attorneys of Clayton, Howarth & Cannon, P.C., to insert said serial number when known); that we have reviewed and understand the contents of the above-identified specification, including the claims; and that we acknowledge the duty to disclose information that is material to the examination of this application in accordance with Section 1.56(a) of Title 37 of the Code of Federal Regulations.

We hereby claim the benefit under Section 119(e) of Title 35 of the United States code of the earlier filed application Serial

No. 60/262,993, filed January 19, 2001; and, insofar as the subject

matter of each of the claims of this application is not disclosed

in the earlier filed pending application in the manner provided by

the first paragraph of Section 112 of Title 35 of the United States

Code, we acknowledge the duty to disclose material information, as

defined in Section 1.56 of Title 37 of the Code of Federal

Regulations, which occurred between the filing dates of the earlier

filed application and the filing date of this application.

We declare further that all statements made herein of our own

knowledge are true and that all statements made on information and

belief are believed to be true; and further that these statements

were made with the knowledge that willful, false statements and the

like so made are punishable by fine or imprisonment, or both, under

Section 1001 of Title 18 of the United States Code, and that such

willful, false statements may jeopardize the validity of the

application or any patent issuing thereon.

Please direct all future correspondence in connection with

this application to:

Customer No. 20450

Please direct all telephonic and facsimile communications to:

Alan J. Howarth, Ph.D.

Telephone:

Facsimile: (801) 255-5338

(801) 255-5335

- 2 -

Please reference the below provided attorney docket number in all communications:

T9479.B

Wherefore, we pray that Letters Patent be granted to us for the invention or discovery described and claimed in the foregoing specification and claims, declaration, and this petition.

Signed at Salt Lake City, Wah (State), this (State)

28 day of Sebruary, 2002.

INVENTOR:

Raymond F. GESTEJAND

Signed at SALT LAKE CITY, UTAH, this (City) day of MARCH, 2002.

INVENTOR:

John F. ATKINS

Signed at $\underbrace{SAC}_{\text{(City)}}$, <u>Utah</u> , this (State)
28 day of February	
0	INVENTOR:
	leas -
	Olga V. MATVEEVA
	·
Signed at	, this
(City)	(State)
day of	
•	INVENTOR:
	Michael C GIDDINGS

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Signed at	(City)	,, thi	S
day of _		, 2002.	
		INVENTOR:	
		Olga V. MATVEEVA	
		•	
Signed at	Chapel Hill	, <u>NC</u> , thi	s
	March	_, 2002.	
		INVENTOR:	
		0000	

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Raymond F. Gesteland, et al.))
TITLE:	FINDING ACTIVE ANTISENSE OLIGONUCLEOTIDES USING ARTIFICIAL NEURAL NETWORKS))) CERTIFICATE OF ASSIGNEE) UNDER 37 C.F.R. § 3.73(b)
SERIAL NO.:	10/050,888	,) ,
FILED:	January 14, 2002)
EXAMINER)
ART UNIT:		,

Commissioner for Patents Washington, D.C. 20231

Sir:

To establish its right to take action before the Office in the above-captioned matter, The University of Utah Research Foundation certifies that it is the assignee of the entire right, title, and interest in the patent identified above by virtue of either:

A.[] An assignment from the inventors of the patent identified above. The assignment was recorded in

Certificate of Deposit Under 37 C.F.R. § 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid in an envelope addressed to Commissioner for Patents, Washington, D.C. 20231, on the limit of the limit

Alan J. Howarth, Ph.D. Attorney Registration No. 36,553 the Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

- B.[X] A chain of title from the inventors of the patent identified above, to the current assignee as shown below:
 - 1. From: Raymond F. Gesteland, John F. Atkins, Olga V.

 Matveeva, and Michael C. Giddings

To: The University of Utah

The document was recorded in the Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: The University of Utah To: The University of
Utah Research Foundation

The document was recorded in the Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

C.[x] Copies of assignments or other documents in the chain of title are attached.

The undersigned (whose title is supplied below) is empowered to sign this certificate on behalf of the assignee.

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the

like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the patent.

Respectfully submitted this 27 day of Mach, 2002.

The University of Utah Research Foundation

Raymond F

d F/Gesteland

President

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ASSIGNMENT

WHEREAS, we, Raymond F. GESTELAND, John F. ATKINS, Olga V. MATVEEVA, and Michael C. GIDDINGS, residents of Utah, have invented a certain new and useful improvement in a FINDING ACTIVE ANTISENSE OLIGONUCLEOTIDES USING ARTIFICIAL NEURAL NETWORKS, for which an application for United States Letters Patent was filed on January 14, 2002, and received Serial Number 10/050,888 (we hereby authorize the attorneys of Clayton, Howarth & Cannon, P.C., to insert said serial number when known; and

WHEREAS, the University of Utah, a university of higher education and a nonprofit corporation, organized and existing under the State of Utah, located at 615 Arapeen Drive, Suite 110, Salt Lake City, Utah 84108; is desirous of acquiring our entire right, title and interest in the same;

NOW, THEREFORE, in consideration of one dollar (\$1.00), the receipt and sufficiency whereof is hereby acknowledged, and other good and valuable consideration, we, the said Raymond F. GESTELAND, John F. ATKINS, Olga V. MATVEEVA, and Michael C. GIDDINGS, by these presents do sell, assign and transfer unto said University of Utah, our full and exclusive right to the said invention and in and to

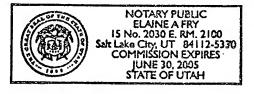
WHEN RECORDED RETURN TO:

said application and any and all divisions and continuations, substitutes and reissues of said application and the entire right, title and interest in, to and under any and all Letters Patent of the United States and foreign countries that may issue or be granted on said invention.

The Commissioner of Patents is hereby authorized and requested to issue said Letters Patent to said University of Utah, as the assignee of the entire right, title, and interest in and to the same, for its sole use and behoof; and for the use and behoof of its legal representatives, to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held by us had this assignment and sale not been made.

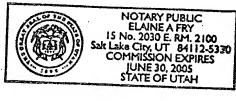
WHEN RECORDED RETURN TO:

Executed this 28 day of February ,2002, at
Salt Lako City, Utak. (City, State)
(City, State)
Comon & Legaland
Raymond F. GESTELAND
STATE OF Utah)
county of Salt Lake)
Before me personally appeared said Raymond F. GESTELAND and
acknowledged the foregoing instrument to be his free act and deed
this 18th day of February, 2002.
Elaine A. Fre
Notary Public
My commission expires: Residing at:
06/30/05 Salt Lake City, Utah



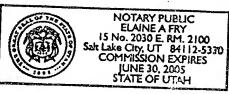
WHEN RECORDED RETURN TO:

Executed this 20th day of March ,2002, at SALT LAKE CITY, UTAH. (City, State) John FATKINS
STATE OF Utah) County of Salt Lake) Before me personally appears to the same personal appears
Before me personally appeared said John F. ATKINS and acknowledged the foregoing instrument to be his free act and deed this 20th day of March, 2002.
Elaine a. fry Notary Public
My commission expires: Residing at:
06/30/05 SAITLAKE CITY, Utah



WHEN RECORDED RETURN TO:

Executed this $\frac{28}{}$	_ day of February , 2002, at	
SKC Wah (City, State)		
	Mass	
'n	Olga V. MATVEEVA	
CTAMP OF A A		
STATE OF Utah) : ss	
County of Salt Lake)	
Before me personal	ly appeared said Olga V. MATVEEVA	anc
acknowledged the foregoir	ng instrument to be her free act and	dood
this 28th day of Febru	uary , 2002.	ueed
	Estaine at try Notary Public	
My commission expires:	Residing at:	
06/30/05	Salt Jake Centy, Utah	Te., Tegg
ED-	\mathcal{P}	



STATE OF THE STATE

WHEN RECORDED RETURN TO:

Executed this 4 day of Mach, 2002, at
Chapel Hill NC (City, State)
Michael C. GIDDINGS
STATE OF North Carolia,
STATE OF North Carolia; County of Orange; SS
Before me personally appeared said Michael C. GIDDINGS and
acknowledged the foregoing instrument to be his free act and deed this 4th day of March, 2002.
Sharon Worley-Roxe Notary Public
My commission expires: Residing at:
3/12/2005 82 Honeysuckle Dr. P. Hsboro, NC

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WHEN RECORDED RETURN TO:

ASSIGNMENT

WHEREAS, the University of Utah, the mailing address of which is 615 Arapeen Drive, Suite 110, Salt Lake City, Utah 84108; has assigned to it a certain product and process entitled FINDING ACTIVE ANTISENSE OLIGONUCLEOTIDES USING ARTIFICIAL NEURAL NETWORKS, for which an application for United States Letters Patent was filed on January 14, 2002, and received Serial No. 10/050.888 (we hereby authorize the attorneys of Clayton, Howarth & Cannon, P.C., to insert said serial number when known); and

WHEREAS, the University of Utah Research Foundation, a nonprofit corporation, organized and existing under the State of Utah, located at 210 Park Building, Salt Lake City, Utah 84112; is desirous of acquiring the entire right, title and interest in the same;

NOW, THEREFORE, in consideration of one dollar (\$1.00), the receipt and sufficiency whereof is hereby acknowledged, and other good and valuable consideration, the University of Utah, by these presents does sell, assign and transfer unto said University of Utah Research Foundation, the full and exclusive right to the said invention and in and to said application and any and all divisions

WHEN RECORDED RETURN TO:

and continuations, substitutes and reissues of said application and the entire right, title and interest in, to and under any and all Letters Patent of the United States and foreign countries that may issue or be granted on said invention.

The Commissioner of Patents is hereby authorized and requested to issue said Letters Patent to said University of Utah Research Foundation, as the assignee of the entire right, title, and interest in and to the same, for its sole use and behoof; and for the use and behoof of its legal representatives, to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held by the University of Utah had this assignment and sale not been made.

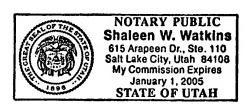
Executed this $\frac{27^{+h}}{\text{day of}}$ day of $\underline{\underline{March}}$,2002, at $\underline{\underline{SCC}}$, \underline{UT} (City, State)

Brent Brown, Technology Manager University of Utah Technology Transfer Office

WHEN RECORDED RETURN TO:

STATE OF)	
County of SLC : ss	Brent Brown
Before me personally a	appeared said Jayne F. Carney, and
acknowledged the foregoing in this $\frac{27^{+h}}{0}$ day of $\frac{27^{+h}}{0}$	instrument to be her free act and deed h , 2002.
	Drace W. Watkins Notary Public
My commission expires:	Residing at:

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WHEN RECORDED RETURN TO: